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OBSERVATIONS IN NATURAL HISTORY MADE DURING THE VOYAGE ROUND THE WORLD OF THE R.Y.S. 'VALHALLA,' 1902-3.

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In the autumn of 1902 the Earl of Crawford, F.R.S., most kindly invited me to accompany him, as naturalist, during his winter cruise round the world in his yacht 'Valhalla.' The collections made in various branches of natural history were all presented by him to the British Museum. An account which I wrote of the birds collected during this trip was published in the 'Ibis' (January, 1904, p. 32).

In the present paper I intend to give a short account of the most interesting of the places visited, as well as "field notes" on the birds, mammals, insects, &c.

We left Cowes on Nov. 19th, 1902, for Lisbon. Numbers of birds were of course seen, Shearwaters (*Puffinus gravis*) being especially numerous, while frequently a Skua (*Stercorarius pomatorhinus*) would dash amongst the Kittiwakes, which were following the ship, and cause them to disgorge the morsels of food which they had picked up. When we neared the coast of Portugal, Gannets (*Sula bassana*) and Little Auks (*Mergulus alle*) became abundant.

After spending two days at Lisbon, we sailed for Madeira on Nov. 26th. On landing at Madeira, one of the most noticeable sights to the naturalist is the quantity of Lizards (*Lacerta dugesii*). These Lizards are to be seen all over the walls by the roadside. During a walk in the country behind Funchal, I obtained several handsome Spiders (*Argyope trifasciata*). The natural history of Madeira has been so well worked, and has been written about so often, that a long account in this paper would be of little interest.

After leaving Madeira, we touched Las Palmas (Gran Canaria), and St. Vincent, Cape Verdes. On Dec. 12th we left the Cape Verde Islands for St. Paul's Rocks. Five days later we sighted this lonely group of barren rocks, which are situated in mid-Atlantic. St. Paul's Rocks are little more than half a mile in circumference, and the highest point is sixty-four feet above sea-level; they are very seldom visited, except when a ship sights them for the purpose of ascertaining her exact position. Consequently the three species of birds which inhabit them, and breed there all the year round, are very tame. The most abundant bird is a common tropical Gannet (*Sula leucogastra*), the other two species being Noddy Terns (*Anous stolidus* and *Micranous leucocapillus*). The Gannets are so tame and fearless of man that we had to push them off their nests in order to climb the rocks, as to walk amongst them with unprotected legs whilst they are sitting is a painful undertaking; the old and even the young birds bite savagely at one's legs. Besides the birds, these rocks are inhabited by swarms of curious-looking red and green Crabs (*Grapsus strigosus*), which were crawling in thousands all over the rocks, and feeding on remnants of flying fishes which the Gannets had brought to their nests as food for the young. A small cricket is fairly numerous, and a tiny beetle and a feather-feeding moth were also obtained. The sea round St. Paul's Rocks swarms with Sharks, and more than twenty were caught from the ship during our few hours' visit. Numbers of fish were caught by our party from the rocks; a species of Cavalli, a Wrasse, and the curious Trigger-fish (*Ballistes* sp.).

After spending a few hours ashore on St. Paul's Rocks, we sailed for the Brazilian convict island, Fernando Noronha. During our visit there were about two hundred and seventy convicts on the island, but they are now no longer sent there. They were all murderers, but from what we saw, I should say

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there are worse places for a convicted murderer than Fernando Noronha. Each man has his own cottage and garden, and has only to do three hours' work a day for the State; the rest of the time they work in their gardens, though all have to attend a roll-call at sunset, when a bugle is blown. Previous to our visit, I believe, only one other naturalist had visited this island; this was Dr. H. N. Ridley. The 'Challenger' touched there in 1873, but were not permitted to collect. Dr. Ridley, however, had worked the island pretty thoroughly, and two species of birds which he obtained were described as new, i. e. *Vireo gracilirostris* and *Elainea ridleyana*. I therefore obtained no novelties, but I met with all the birds obtained by him. There are only three species of land-birds, they being the two species already mentioned, and a small Dove (*Zenaida ariculata*). This latter bird is not peculiar to Fernando Noronha, as the two former species are, but is found also in South America. It is very abundant, and is to be met with all over the island, sometimes in large flocks. Maize is grown in some quantities on this island, as well as a few bananas. The natives, with great dexterity, use catamarans, *i.e.* rafts made of three logs lashed together side by side, with a small seat at one end. Several of the convicts, to show us, went through the rough surf, propelling their catamarans with a single paddle. There is always a surf breaking on the shore, and we never landed or went off without getting wet. The only mammals on this island are imported Rats (*Mus rattus*) and Mice. I saw several small blue butterflies, but obtained none of them.

There are two species of Lizards on Fernando Noronha, but I only met with and obtained one of them, *Mabuia punctata*. This Lizard seems to be very abundant on the island, but very quick and agile. I saw numbers basking on the dry sandy ground amongst some small fig-trees. Opposite our anchorage there was a very large "blow-hole" in the rocks, through which every few minutes the sea drove the air with a loud rumble. We sailed for Bahia, Brazil, on Dec. 22nd.

Christmas Day was spent within sight of the low-lying coast of Brazil, and the tropical heat was very unlike Christmas weather.

Bahia is a very fine-looking town from the harbour, but on landing one finds the streets narrow and dirty; so that it is a relief to get away from the town and into the magnificent tropical forests. In these forests one sees gorgeous birds and butterflies, and I here met with my first Humming-birds. The most abundant species of Humming-bird is *Chrysolampis moschitus*, although the handsome long-tailed *Eupetomena macrura* is also common. These two birds may be seen together in plenty round the big flowering plants and trees; their flight is exceedingly rapid, and whilst they are hovering over the blossoms their wings are moved with such extraordinary rapidity that they produce the loud humming, from which these birds have got their name. About the streets in the town one meets with a little bird somewhat resembling our Wheatear in its actions, although it is paler in colour. This is *Fluvicola climacura*, called by the natives "Washerwoman." It is a great favourite with the natives, and is consequently very tame. In the open glades in the forest we met with many birds, Tyrant Flycatchers being perhaps the most abundant, and from the tops of the tall trees the loud cry of *Tyrannus melancholicus* is continually heard. Woodpeckers are very numerous, and the beautiful Red Tanager (*Rhamphocœlus brasilius*) is constantly met with near the glades and edges of the forest. In these open grassy tracts one sees narrow pathways, where the grass has been completely worn away by the continual passing and repassing of the Umbrella Ants. It is soon seen why these ants have got this trivial name applied to them, as they carry large pieces of leaves in their mouths, with which they completely conceal themselves. On Jan. 5th we left Bahia for Monte Video.

Most of the time we were in the tropics we of course saw numbers of Flying Fishes. I believe there is considerable diversity of opinion as to whether Flying Fish move their wings or not during their flight. I spent a great deal of time watching them, and am fully convinced that they do move their wings, but with such a rapid shivering movement that it is almost imperceptible. I caught one Flying Fish (*Exocoetus evolans*), which had flown on board. I at once placed it in a large bath of sea-water, to see what use, if any, it made of its wings (I call them wings now for simplicity's sake) when in the water. It appeared that while the fish was swimming it kept them pressed close to its sides, and made no use at all of them as fins. It also seemed unable to turn quickly, but could only do so by taking a fairly large circle. Flying Fish seem able to alter their course while in the air. I watched many taking long flights, and turning in several directions without touching the water; I presume this is done by bending the tail to one side.

On Jan. 14th we anchored at Monte Video, where we stayed a day or two to "coal." I spent some time fishing from the ship. Two species of fish only were caught—one a common Catfish, but the other (a *Corvina*) proved to be an undescribed species. It has since been named *Corvina crawfordi*, after the Earl of Crawford. The largest fish of this species which I caught was about three-quarters of a pound in weight the bait used being a piece of raw veal. In the harbour at Monte Video I had a good view one evening of *Cygnus nigricollis*, the Black-necked Swan, two of which flew over the harbour.

On Jan. 20th we took on our pilot for the Straits of Magellan, and left Monte Video for Punta Arenas.

The first Albatross (*Diomedea exulans*) was seen the day before we got to Monte Video. After we left there for the Straits of Magellan we saw some numbers of these birds, as well as *D. chlororynchus*.

On Jan. 27th I saw two species of birds which were of special interest to me, *i.e.* Diving Petrels (*Pelecanoides urinatrix*) and Penguins (*Spheniscus magellanicus*). The Diving Petrels were seen nearly the whole day rising from under the ship's bows, flying away with a feeble fluttering flight, and dropping with a splash into the water fifty yards or so from the ship, when they immediately dived. Later on, when we were in the Straits, and I was able to shoot a few of these curious little birds, I noticed that they rarely took to the wing when pursued, but sought safety by diving. The Penguins have a curious habit of lying on their side in the water with one leg out, and drifting with the wind or current. I shall never forget skinning the first Penguin. The inner surface of the skin is covered with quite an inch of oily fat, and the quills of the feathers extend backward through this coating of fat, consequently making it very difficult to remove.

On Jan. 29th we passed through the first and second narrows.

In these narrows in the Straits of Magellan there were quantities of sea-birds: Terns (*Sterna hirundinacea*), Skuas (*Megalestris chilensis*), Penguins (*Spheniscus magellanicus*), Albatrosses (*Diomedea exulans* and *D. chlororynchus*), as well as Diving Petrels. At about midday we arrived at Punta Arenas, the only town in the "Straits." It is a curious-looking town, many of the houses having tin roofs. Punta Arenas is situated on the low-lying ground close to the sea; behind the town the hills rise up, clothed to their summits with beech-forests. In the Magellan Straits there are two species of beech-trees, *Fagus antarctica*, which is deciduous, and *F. betuloides*, which is an evergreen. The forests round Punta Arenas are chiefly composed of the former. When approaching Punta Arenas from the east end of the Straits, as we did, the first of the country seen is entirely bare and sandy. In this part of the Straits we saw the curious Huanaco (*Lama huanacos*). When the town is reached, however, the country entirely changes; thick forests and high mountains take the place of flat sandy country, and this thickly wooded country continues to Chile. During our stay at Punta Arenas the forest behind the town was on fire; we were told that this fire had been burning for a month. A coal-mine had just been opened, and we paid a visit to it, in company with the governor of the town. I went down the mine; there was no deep shaft, but simply a tunnel bored in the side of the hill, through which a line is laid, and we went into the interior of the mine on a truck. Outside the entrance to the mine, at an altitude of 1000 ft. above sea-level, I found a large mass of soft rock, in which numbers of large Oysters were imbedded. I managed to dig out a complete specimen. In the forests and in the open country round Punta Arenas I saw very few birds, the most abundant species being a small Chat (*Centrites niger*), which I found fairly abundantly along the shore. I also met with the curious "Quail Snipe" (*Thinocorys rumicivorus*); this little wading bird, which has the habits and appearance of a Sandpiper, has the bill of a Quail or Partridge.

On Feb. 3rd we left Punta Arenas. Ships going through the Straits of Magellan have to anchor every night, so we had several opportunities for collecting. All the way through the Straits there are numbers of natural harbours, and every afternoon we anchored in one of them. The beauty of one's surroundings in these anchorages is almost impossible to describe; towering hills on every side, covered to their highest peaks with dense forests, which are almost impenetrable; the water like glass, and of an inky blackness; little islands dotted around, and covered with flowering shrubs, fuchsias, &c., form a scene of such magnificent beauty that I shall never forget the time spent in the Straits of Magellan.

After leaving the Magellan Straits we passed through Smythe's Channel, through the last narrows, and out into the stormy waters of the Gulf of Peñas. During our passage through Smythe's Channel we came across several parties of the now comparatively scarce Fuegian Indians. These stunted and hideously ugly people travel about in canoes from island to island in the Straits; they wear comparatively little clothing—a few Otter skins only —and live almost entirely on Mussels (*Mytilus magellanicus*). When travelling they always have a wood fire burning in their boat. We came across several deserted camps of these Indians.

No account of the Straits of Magellan would be complete without a mention made of the "Steamer Duck" (*Tachyeres cinereus*). This curious Duck is, I am afraid, not nearly so abundant as it was formerly; at least, so I was told by our pilot and others, and, although we saw plenty of them, there were not the large numbers as described by Prof. Cunningham ('Natural History of the Straits of Magellan'). There has been considerable controversy as to whether there are two species of "Steamers" or not. It is said that one species is able to fly, while the other is not. I myself never saw a bird of this species fly, although I pursued numbers. They seem to run on the surface of the water, flapping their tiny wings. One of our party, however, saw one of these Ducks fly, and he was close enough to clearly identify it. For my own part, I believe that there is one species only, and that the assertion made by some authors—*viz.* that the birds of the year are able to fly, but as they get older they lose the power to do so—is correct, and my experience seems to convince me of this; that is to say, that during our visit, early in February, the old birds were nearly always accompanied by *down* birds, or young birds not fully fledged, and which had not then grown their wing-feathers; so that the only birds we saw (with the one exception mentioned above) were old birds incapable of flight, and young birds with featherless wings. The pace these birds manage to go across the water, flapping their wings and running on the water, is so great that we found it impossible to catch them up with a six-oared boat, try how we would.

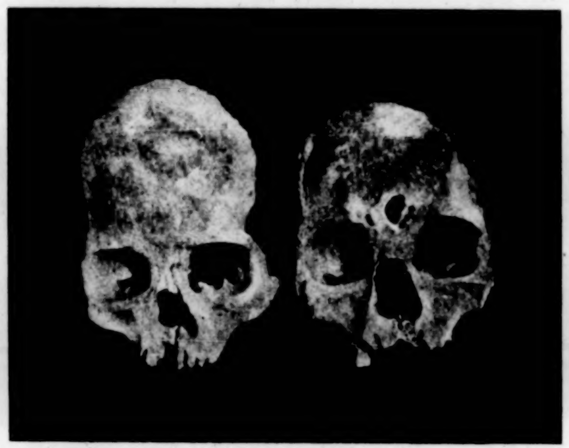
A common bird in these Straits is *Phalacrocorax atriceps*, a very handsome white-breasted Cormorant, while a smaller bird of the same genus (*P. magellanicus*) is also met with in considerable numbers.

In the thick forests along the shores of Smythe's Channel very few land-birds were seen. Occasionally the plaintive whistle of *Elainea albiceps* is heard. In our last anchorage (Gray's Harbour) I met with a most curious Wren-like bird with an enormously long tail composed of four feathers; this was *Sylviorthorhynchus demursi.*

During our passage through the Magellan Straits and Smythe's Channel, I only once saw a Bat. Another interesting mammal met with was the Otter (*Lutra patagonicus*), of which species I shot one example.

After passing through the Gulf of Peñas, we passed up, out of sight of the coast of Chile, and dropped anchor off Valparaiso on Feb. 14th. In the Bay of Valparaiso I obtained a fair collection of sea-birds, but land-birds were very scarce outside the town. Several insects were obtained, and amongst these one specimen of a very rare species of Micro-Lepidoptera (*Heliostibes mathewi*). This species was hitherto known only from a single example.

After being docked for cleaning, and having taken on a supply of coal, we sailed from Valparaiso on Feb. 24th, bound for the islands of the South Pacific. After fourteen days' sailing with a fair wind we sighted Easter Island on March 10th. Owing to a very high wind, however, we were unable to land for two days. We steamed up and down under shelter of the island, when, with a strong glass, we could distinctly see the huge stone images for which Easter Island is famous. When this island was first discovered it was entirely uninhabited, the only signs of inhabitants being the stone images, which are cut out of solid blocks of lava in the shape of a human head and part of the body. Some of these figures, which are about thirty feet in height, are placed in a standing position, facing the sea, on the sides of one of the smaller craters, while others are placed at intervals along the shore. Why these figures are there is unknown, but, as Easter Island has never been properly "worked," this is not surprising. Except for mention of some caves in the largest crater, which I shall try and describe later, I have been unable to find any account of the mystery of Easter Island. During our short visit we found a human skull lying near one of the images, and on questioning a native (Easter Island is now used by a Chilian company as a sheep and cattle run, and Polynesians have been introduced to work there), we were told that there were quantities of human bones under the statues, or rather among the large blocks of lava on which many of the images are standing. We at once set the natives to work to collect some of these bones, and in a short time we got about a dozen skulls and many other bones, nearly all of which appeared to be of great age, and in many instances were crumbling away.



Crania found at Easter Island.

My illustration shows the facial part of two of these skulls, which I photographed. These bones are now being worked out at the British Museum, but I have not yet heard the result; they undoubtedly belong to the race which formerly inhabited Easter Island, and, according to measurement made by the doctor on board and myself, they were a small race of people, possibly little over five feet in height, and very different to the tall stalwart Polynesians. The present natives on the island knew nothing about these bones, except that they were there when the ranchers arrived. In the crater of Rana Kao, the highest point of which is 1200 ft. above the sea, are several caves, in each of which there are curious carvings, which were described to me by some of our party (I did not have time to see them myself, as we were only eight hours on shore) as resembling mermaids, or figures like mermaids, and the "rising sun." We were also told that there was some writing carved on both wood and rock on the island, but no one could tell us where it was. If only a proper investigation could be made of Easter Island many other curious things would be sure to come to light, and help us to understand more about the undoubtedly clever race of people now so long extinct, who formerly lived there. After all, Easter Island is not so difficult to get to. A boat visits it twice a year from Valparaiso. Birds are very scarce on Easter Island. There is one land-bird,* which I did not meet with, and a Tinamou (*Nothoprocta perdicaria*) has been introduced from Chile. In the crater of the extinct volcano I saw a few White Terns (*Gygis candida*), and several Geese, some black with a white patch on the wing, and others reddish in colour; but I do not know to what species they belong.

Easter Island is almost entirely covered with grass, there being no trees or bushes except around the houses at the settlement. At the time of our visit we were told that there were about forty thousand Sheep on the island, as well as many Horses and cattle.

On March 22nd, early in the morning, we sighted Pitcairn Island, the home of the descendants of the mutineers of the 'Bounty.' It was a most gorgeous day, and a sea like glass. As we neared the island a few Flying Fishes rose under our bows, while every now and then a Red-tailed Tropic Bird (*Phaethon rubricauda*) flew past us. We anchored in Bounty Bay, close to the settlement. A boat-load of the islanders at once put off to us with fruit, &c. They were very anxious to obtain some shot-cartridges to kill some of their fowls, which are allowed to run wild over the island, and consequently become very shy. There is always a heavy surf along the shore, and, as landing is very difficult in an ordinary boat, we went ashore in one of the Pitcairn surf-boats. The islanders are exceedingly skilful in using these boats, and they ran us up into a little sheltered bay through a surf that must have swamped any ordinary boat.

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* Possibly unknown to science.

I soon started off into the island collecting, and in less than a day I went over nearly the whole of Pitcairn. The roads or paths are well kept, and a supply of fresh water runs down from the top of the island through pipes to the settlement. Banana-trees grow in profusion over most parts of the island. The highest point is about 1000 ft. above sea-level.

There is only one species of land-bird, which is, however, abundant. It was described as a new species two years before our visit, from specimens brought home by Lieut. Vaughan, of H.M.S. 'Duke of Wellington,' and was named after its discoverer by Dr. Bowdler Sharpe. This bird (*Tatare vaughani*) has been figured by Mr. Keulemans in my paper on the birds collected ('Ibis,' January, 1904, plate 1). Until our visit the plumage of the young bird, which differs considerably from the adult, was unknown.

There are several species of sea-birds at Pitcairn. Gannets (*Sula piscator*), the Tropic Bird previously mentioned, Noddy-Terns (*Anous stolidus*), and White Terns (*Gygis candida*). There is also a large Shearwater (*Puffinus* sp.), which I saw in some numbers flying at some distance from the island. There are some Rats on the island, but I was not able to get one. It is probably *Mus rattus*, which has been brought by ships, very possibly by the 'Bounty' itself. There is a Lizard (*Lygosoma cyanurum*), which is very abundant. I caught a few Micro-Lepidoptera, amongst which *Plutella maculipennis* was the most noteworthy. From a water-butt we took some larvæ of Mosquitoes, which, when reared, proved to be *Stegomyia fasciata*. After spending a day and a half at Pitcairn, we left, on March 23rd, for Tahiti.

During our passage to Tahiti we passed several tree-trunks and many cocoanuts floating on the water. These were undoubtedly some of the trees carried away during the fearful hurricane in the Pamoutu Islands, which are the low coral islands and atolls of the Society group. This hurricane occurred a few months before our visit.

On March 28th, in lat. 23° 20′ 23″ S., long. 142° 58′ 28″ W., a large Shark was caught, off which I took a Sucking Fish (*Echeneis remora*). These Sucking Fish were seen swimming round the Shark in some numbers. When we got it on board I held this Sucker to my hand; it immediately fastened itself on, and held firmly.

On March 30th the beautiful island of Tahiti was sighted, and early next morning we were piloted through the reef which surrounds the island, and anchored off Papeete. Tahiti is probably the most beautiful of the many beautiful islands of the South Pacific. It rises to a great height from the sea, and is entirely covered with thick forests. During our stay at Tahiti we visited Tautira, a small picturesque village some miles from Papeete along the coast. During this passage we had a fine view of the coast, when some of the deep gorges and waterfalls were seen to advantage. From Papeete one has a good view of the neighbouring island of Eimeo, about twelve miles or so distant. A curious feature of this island is observable on a clear day, and this is a large hole completely through one of the jagged peaks which crown the top of this island. Several visits were made to the Barrier reef, where, owing to the glass-like clearness and stillness of the water, the brilliantly-coloured fish which inhabit the coral-reef were easily observable.

Sea-birds were not at all abundant; the only species noticed were Frigate Birds (*Fregata aquila*), White Terns (*Gygis candida*), and Tropic Birds (*Phaethon* sp. ?). Land-birds seemed equally scarce, but all birds are protected, and we were unable to collect. Two species of butterflies were taken, as well as several Micro-Lepidoptera; amongst the latter, *Pyroderces crawfordi* has lately been described by Lord Walsingham as new to science. During the voyage I always found that numbers of these insects could be taken while sitting on or flying round the "after" light on the poop. Everywhere on the low ground and swamps near the shore the burrows of Land-Crabs are seen, but their inhabitants are very knowing and difficult to capture. Terrestrial Hermit-Crabs are also very abundant, and crawl up to some height on the trees and shrubs.

On April 17th we left Tahiti for Tutuila Island, one of the Samoan group. Five days later we anchored in Pago-Pago Harbour. The harbour of Pago-Pago, or Pango-Pango, as it is pronounced, is one of the most, if not the most, sheltered harbour in the South Pacific Islands; situated almost in the middle of the island, and about two miles in length from the sea, it is completely sheltered by high hills on each side. These hills, like all those in these South Sea Islands, are thickly wooded, and in these woods I found plenty of birds. By far the most abundant species of birds in Tutuila is *Ptilotis carunculata*, whose loud note is continually heard. *Aplonis atrifusca* is likewise common, and reminds one of our Blackbird in its habits. The beautiful little Scarlet and Black Honeysucker (*Myzomela nigriventris*) is also frequently seen in the tops of the cocoanut-trees. Towards evening large Fruit Bats (*Pteropus fuscicollis*) come down in numbers from the hills to the back of the town, where they may be observed flying round the cocoanut-trees. Two species of Mosquitoes were obtained (*Stegomyia fasciata* and *S. scutellaris*).

On April 24th we left Tutuila for Upolu, another of the Samoan Islands. The same evening we anchored off Apia, the chief town of Upolu. During the three days spent at Apia, I made two excursions, collecting. One day I walked along the shore about eight miles beyond the town. Here I met with examples of *Totanus incanus*, a large Sandpiper, whose eggs are as yet unknown; here also I saw large flocks of the Eastern Golden Plover (*Charadrius fulvus*), numbers of which were in nearly full breeding plumage. A small Heron (*Demiegretta sacra*) is also common on Upolu. In its immature stage this bird is snowy white, becoming blue-grey as it nears maturity. The next day I went inland, where, at a height of 1000 ft., I procured specimens of a beautiful Fruit Dove (*Ptilopus fasciatus*). This small Dove, which is no larger than our Turtle-Dove, was feeding on the seeds of a tall tree; each seed, which was larger than an olive, was swallowed entire. The Fruit Bat (*Pteropus fuscicollis*) was fairly numerous; I shot one as it was hanging from a branch over the road. I saw one of these Fruit Bats flying about with a young one clinging to it, but was unable to obtain it.

In the Samoan Islands I watched several natives fly-fishing in the surf on the Barrier reef. A long bamboo is used as a rod, at the top of which a line is fastened; at the end of the line a piece of stick is tied crosswise, and from each end of this stick a black-feather fly is attached by a piece of line about six inches long above the hook. They seem to be very successful with this fishing. Fish are also taken in wicker-baskets set in the coral-reefs.

On April 29th we left Samoa for Fiji, where we anchored at Suva. A great mistake has been made in some of the Fiji Islands by the introduction of the Mongoose. This animal was introduced to destroy the Rats, but of course it soon either tired of or killed the Rats, and is now an intolerable nuisance, as it kills the chickens and even young Pigs, especially near the town of Suva, where it swarms. It is also probably destroying many of the ground-building birds, as it is doing in the West Indies. A Myna has also been introduced, but whether it is doing harm or not I cannot say, as I had no opportunity of observing it. A fairly common bird near Suva is *Pachycephala graeffei*, a fine Golden-breasted Bush-Shrike. Owing to the thick foliage I found it very difficult to see birds in Fiji; numbers could be heard all round, but until one is very close it is impossible to get a sight of them. Therefore I found that a very small collecting-gun was the most useful for obtaining birds. Birds as well as insects are far more abundant in the Fijis than in any other of the South Sea Islands we visited; in fact, in the islands nearer to South America birds and insects were scarce. In several islands—Pitcairn, Easter Island, &c.—there is but one species of land-bird, while the further west one gets the more abundant land-birds become. The reason for this is doubtless that the avifauna of the South Pacific Islands is more nearly allied to Australian forms, and the Fijis, being nearest to Australia, have therefore a greater abundance of species. A species of butterfly (*Danais*), however, which I took in Fiji, appears to be nearest to *D. archippus** of North and South America, and may have extended its range across Pacifica.

Before finishing my short account of the South Sea Islands,

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* This butterfly is found in the South Sea Islands (*cf.* "Geograph. Distr. of *Danais archippus*," Trans. Ent. Soc. 1877, p. 93.—Ed.

I might mention that there are practically no mammals in any of these islands, Bats excepted. There are of course Rats, but these are all imported, and belong to the well-known species, *Mus rattus*.

On May 6th we sailed from Suva for Thursday Island, Torres Straits. On May 16th several moths appeared on board; these must have come many miles by sea, the nearest land being New Guinea, sixty miles distant.

During our passage to Torres Straits several Gannets (*Sula leucogastra*) came on board, and I was surprised to see with what ease they managed to sit on the rigging. I should not have believed that a clumsy web-footed bird like a Gannet could perch on a rope as well as they did. I noticed during our passage through Torres Straits that the islands towards the Pacific end are of coral formation, while those to the westward appear to be volcanic. Several of the Torres Straits Islands seem to be the stopping-places of many birds migrating from New Guinea to Australia, and *vice versâ*. As an instance, I might state that on Thursday Island I put up a pair of Bustards (*Otis australis?*) close to the town, a most unlikely place for these birds. We spent several days at Thursday Island, and whilst there I made several collecting trips in this island and the neighbouring Prince of Wales Island. An interesting sight on these islands was the enormous nests of the White Termite, several of these nests being fully eight feet in height.

On both these islands I found a species of Slowworm (*Lialis burtoni*) abundant. This species has a longer and more sharply pointed head than our Common Slowworm.

On May 23rd we left Thursday Island for Singapore. All the day we were passing numbers of Sea-Snakes, which were lying motionless on the top of the water. One of these Snakes was foul-hooked on a line which we were trailing astern; it proved to be *Acalyptophis peronii*.

The remainder of our voyage was by a route too well known to need much description. Touching at Singapore, I made a day's excursion inland, collecting insects. Here I noticed that the Sparrows in the streets were all Tree-Sparrows (*Passer montanus*).

From Singapore we steamed to Colombo, from thence to

Aden, on through the Red Sea to Suez, and through the cana to Port Said. At the latter port I took train to Kantara, which lies between the Suez Canal and Lake Menzala, where I met with Rufous Warblers and Crested Larks, both common birds, but interesting to me, as both have occurred in England. From Port Said we steamed to Gibraltar, and finally dropped anchor at Cowes on Aug. 1st, 1903, after an absence of nine months on the most delightful and interesting voyage which it is possible to make.

My very best thanks are due to the Earl of Crawford for his great kindness in taking me with him as naturalist on this most pleasant of voyages, and I trust that this account of my experience may be of interest to my readers. It must be remembered, however, that it is by no means easy to describe the various islands and places, but that they must be seen to be appreciated.

ON THE BREEDING OF THE BLACK-NECKED GREBE (*PODICIPES NIGRICOLLIS*) IN THE BRITISH ISLANDS.

By O. V. Aplin, F.L.S.

Some years ago, while writing the articles on Grebes in the work called 'British Birds, their Nests and Eggs,' I took considerable trouble to investigate the distribution of these birds in our islands, and the various reports of the breeding of the rarer species in Great Britain. It therefore gives me especial pleasure to be able to announce that I have recently received satisfactory evidence that several pairs of the Black-necked, or, to give it its more time-honoured name, the Eared Grebe (*Podicipes nigricollis*), reared their young in Britain during the summer of 1904.

The discoverers of this most important and interesting fact prefer to remain entirely anonymous, in order that they may guard more effectually against the locality in which this little colony of Grebes has established itself becoming generally known. It is unfortunate that such a precaution should be necessary, but the reason for taking it need hardly be indicated.

The news that the birds were breeding was communicated to me at once, and, after considerable deliberation, it was decided that the fact of another species being added to the list of birds breeding in these islands ought not to be kept a secret; and that I, an outsider (for I was prevented from taking advantage of a kind offer to show me the birds), should be entrusted with the pleasing duty of making known this important discovery.

It must suffice for me to say that the names of those who had the good fortune to find these beautiful Grebes breeding with us are well known to ornithologists, and, with regard to the identification of the birds in question, would carry complete conviction to the mind of anyone; moreover, I may add that three other ornithologists have had the privilege of seeing the birds.

A transcript from the note-book of one of the discoverers has been entrusted to me, and I feel that I cannot do better than reproduce it here almost word for word, omitting anything that by any possibility might tend to divulge the situation of the colony. He writes as follows:—

On the 3rd June, 1904, we visited a shallow lake about three-quarters of a mile in length. The surrounding ground is very marshy, and perhaps half the area of the lake itself is covered by beds of club-rush, bogbean, pondweed, and persicaria. When we were walking round the lake we caught sight of a Black-necked Grebe in full summer dress in a bed of pondweed at the edge of one of the big patches of club-rush. This bird, which we watched for an hour or so, did not feed in the open water, but passed from one bed of pondweed to another, frequently diving for short periods in a limited area. When we got round to the other side of the lake we saw another, or possibly the same, bird, diving in open water near one of the beds of club-rush; and we also watched, at a distance of fifty or sixty yards, two pairs of birds, each with two downy young. A few days later we went to the place again. At the spot where we had seen the two pairs with their young on the 3rd there were then four pairs, with one, two, two, and three young ones respectively. Sometimes one and sometimes another of these birds would be hidden in the beds of rushes or bogbean, but at times all four pairs were to be seen feeding within a limited area in the shallow water. In another part of the lake we saw a fifth pair with rather larger young, and two unattached adults. As the birds were sometimes only a few yards from us, we had an excellent opportunity of seeing the details of their plumage. When both birds of a pair were side by side, the larger size of the male was quite apparent, but little or no difference was to be seen in the plumage of the sexes. The neck, black before and behind, was clearly divided from the dull white of the breast and belly (the colour of the under parts was only seen when the birds raised themselves in the water and flapped their wings, or rolled on one side to preen themselves); when they flapped their wings the white on the primaries and secondaries showed clearly. A black frontal crest stood up, showing off the silky ear-coverts which shone like golden oat-straw; eyes a bright clear-ruby, something like a ripe red-currant with the light shining through it; bill black. The rufous feathers of the flanks, which covered much of the wings when the birds were swimming in a normal position, shone in the sun with a bronze lustre. The black neck and wings also showed metallic-green reflections. When the wings were raised to form a cradle for the young, the tips of the white feathers showed clearly. The upcurved lower mandible was clearly visible. The young were clothed in ashy-grey down, striped on the head and neck; under parts white; bill lead-coloured. The adults, when seen from behind, looked very broad in the stern, as Dabchicks do. The bill looked very short and sharp, an effect produced by its recurved shape and the abrupt rise of the frontal crest.

The birds never travelled far under water, but dived in a limited area, as Dabchicks do. The consecutive dives of one bird, which we timed, were 25, 10, 25, 24, 9, 14, 12, 25, 9, and 23 seconds respectively. Generally one of the parents attended the young, either carrying them on its back, or swimming near them, whilst the other dived for food; but sometimes both parents were under water together, a lack of caution which I have never known in the Great Crested Grebe. Both sexes carried the young on their backs. We never saw a bird dive with its young on its back as Dabchicks are said to do. The old bird, when about to rise, rose in the water, flapped its wings, and shook off the young ones.

This seems to be the invariable habit of *Podicipes cristatus* under similar circumstances. Once the brood of three young were all on the back of one parent at the same time. The little creatures clambered up over the bird's tail as the young of *P. cristatus* do. Small fish were sometimes brought up by the old birds, but the food generally captured was something else—we could not make out what. The young were fed sometimes when on the back of the other parent, sometimes when in the water. They dived for a few seconds now and then. Once when a bird passed overhead the three young in one brood went under simultaneously. On one occasion two adults faced one another with necks erect and bodies raised vertically, as Great Crested Grebes do when courting, but we could not make out whether the yellow ear-coverts were then expanded laterally.

Here these valuable field-notes come to an end.

Of the three rarer Grebes which visit this country, the present species has always been regarded as the most likely to remain to breed with us, and I may mention that in a letter addressed to the Editors of the 'Ibis' (1902, p. 165), when recording a pair of Eared Grebes killed in Oxfordshire on Sept. 19th, 1899 (which I regarded as adult birds that had passed the summer, and had bred, or tried to breed, in this country), I pointed out that parts of the British Islands lie within the geographical breeding range of this species, which is recorded to have been found in summer as far north as Jutland, and to breed commonly in Southern Spain, while to the east as well as to the south of us it is common.

There is a considerable amount of circumstantial evidence that the Eared Grebe has bred in these islands in former years, most of which I have detailed in 'British Birds, their Nests and Eggs' (vol. vi. p. 197, *et seq.*), although more has become available since that work was published. But the direct evidence that we have upon this point is scanty. Pennant ('British Zoology') says positively that these birds bred in the fens near Spalding, and he described the nest and eggs. But the only other definite evidence that I have been able to find is that of the late E. T. Booth, who stated ('Rough Notes') that a full-plumaged adult and a couple of downy mites were brought to him by a marshman. The reason why these specimens were not preserved was, no doubt, that Booth included in his collection only those birds which he had actually obtained himself. I have recently had occasion to point out (*ante*, p. 266) that the birds which bred on Chelsea Common in 1805 (figured by Sowerby in the 'British Miscellany'), which have been sometimes mentioned as belonging to the species now under consideration, were merely Little Grebes in the, at that date, little-known breeding plumage.

ON THE NESTING HABITS OF THE PIED WAGTAIL (*MOTACILLA LUGUBRIS*, TEMM.).

BY THE REV. F. C. R. JOURDAIN, M.A., M.B.O.U.

NONE of our standard works on British ornithology appear to mention the fact that this bird not infrequently adapts the nest of some other species to its own needs. I am inclined to think that the habit is more common than is generally supposed to be the case, and that many Wagtails' nests, on examination, will prove to be merely relined old nests of some other species. Since my attention was first drawn to this, I have noted down a few recorded instances of a similar kind. Thus Mr. H. Blake-Knox (Zool. 1862, p. 7997) says that a pair of these birds "took possession of a deserted nest of the Robin in an ivied wall; the young were reared." In the same volume (p. 8099), Mr. H. Reaks states that in the spring of 1861 a Robin built its nest under the thatched eaves of a garden summer-house: "this year [1862] a Pied Wagtail repaired the nest, and deposited five eggs therein." An even more remarkable instance is related by Mr. J. Ranson in 'The Zoologist' for 1863 (p. 8844): "For some years past a pair of Chimney-Swallows have built their nest and reared their young in one of our chimneys, but this spring a pair of Wagtails took possession of the old nest, and have reared one brood, and the hen, on the 29th of June, was sitting on her second laying. The Swallows made two or three ineffectual attempts to build in the same chimney, but were compelled to take to another."

Mr. J. J. B. Young has recorded in the 'Field' an instance of a Wagtail breeding in an old Thrush's nest at Stonyhurst, Lancashire; and in the same paper a correspondent from Cringleford describes how a pair of Wagtails took possession of a deserted Thrush's nest with four eggs, and built upon the top of it ('Field,' June 1st, 1895). My friend Mr. E. W. H. Blagg found a Pied Wagtail's nest with five eggs in an old Blackbird's nest in a rhododendron-bush in a shrubbery at Cheadle, Staffordshire, and in 1902 Mr. R. H. Read found a nest of the Pied Wagtail built in a nest of the Song-Thrush, from which the young Thrushes had lately flown. This nest was exhibited at a meeting of the B.O.C. on Feb. 18th, 1903.

We generally have a pair of Pied Wagtails nesting within a hundred yards of Clifton Vicarage, and in 1902 I noticed that they were obviously breeding somewhere in the vicinity of a road with hedgerows on each side, but did not think of examining the old nests at the time. However, next year they were again haunting the same spot, and on June 14th (*ante*, p. 106) I found the hen sitting on five eggs in a big, substantial nest in the hedgerow, which I have now little doubt was an old Thrush's nest adapted for nesting purposes by the addition of a new lining. This year they took possession of an old Blackbird's nest, from which young had been hatched in 1903; a new lining was added to it, and on May 4th it contained six eggs.

Of course this list of instances where another bird's nest has been utilized by the Pied Wagtail is not intended to be exhaustive, and probably further research would bring many similar instances to light; but it is sufficient to show that this bird not infrequently adapts the nests of other birds (especially that of the Song-Thrush) for breeding purposes.

Another curious habit, of which I have not seen any previous notice, is the way in which Wagtails frequently resort to their breeding places in September, if the weather is fine. The cock takes his station on some commanding point not far off, and utters his monotonous "chizz-it" exactly as in the spring; while the hen visits the nest, picks up and plays with lining material, and behaves exactly like a nesting bird, as long as the weather remains favourable. The habit is evidently due to a slight recrudescence of the breeding impulse after the moult, which shows itself in the autumn songs with which we are familiar in the case of the Chiffchaff, Willow-Wren, and other birds, and sometimes leads to attempts to rear an autumn brood.

In the case of the Rook this appears to take place more frequently than any other bird, and I have notes of eggs or young birds in 1844 (Oxon), 1863 (Sussex and Hants), 1870 (Warwick and Suffolk), 1872 (Northants), 1891 (Suffolk), 1893 (N. Devon), 1894 (Oxon), and 1900 (Northants),* and have little doubt that this list might easily be doubled or trebled by a search through the back numbers of the 'Field,' 'Magazine of Natural History,' &c.

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* *Cf. ante*, p. 370.

SOME NOTES ON SWISS BIRDS OBSERVED IN JUNE, 1904.

By the Rev. Charles W. Benson, LL.D., Rector of Balbriggan, Co. Dublin.

I stayed at Chexbres sur Vevey this summer, as chaplain for June, for the Colonial and Continental Society, and I found it to be one of the most charming places I have ever visited in Switzerland. It is situated at a height of about 700 ft. above the Lake of Geneva, of which it commands a most delightful view, and is three miles from Vevey, and about seven from Lausanne. Two railways pass close to the village.

The Hôtel Victoria, where I sojourned, has very pretty well-shaded grounds around it, and I found that nearly every bird to be observed in the surrounding country could be observed there.

I did not on this occasion meet with any birds which were new to me, but I was enabled to study some more closely than I had done before.

The Warblers I noted were—Nightingale (one only), Wood, Blackcap, Garden, Marsh, Sedge, Reed, Chiffchaff, Whitethroat, Bonelli's, and the Willow-Warbler, the last named very rare. For the first time in my experience in Switzerland, I heard the Wryneck every day, whilst the Black Redstart, the Siskin, and the Cirl-Bunting were always to be found near the hotel; the monotonous song of the latter was unceasing. I observed no Corn-Crakes, but the pleasing "wet my foot," as we call it in Ireland, of the Quail was a daily experience. Bonelli's Warbler was plentiful in the woods, but nowhere did I hear or see a Song-Thrush; on the other hand, Blackbirds were extraordinarily numerous, and never have I heard their song to such advantage, the "serene happiness" of which Mr. Hudson speaks, as such an eminent characteristic of this lovely song, was greatly appreciated by all the sojourners in the Hôtel Victoria. The Serin-Finch only once visited our grounds, but I heard it on other occasions in the gardens at Vevey. The Great Grey Shrike once looked down upon me from an unusually high electric pole in the neighbourhood. My last experience of this bird was at the ruins of Trimburg, near Kissingen.

The only notable bird we saw on the Rochers de Naye, 6700 ft., on June 7th, was the Alpine Chough; but there was such a vigorous snowballing going on by students from various colleges, that probably other birds deemed it well to keep at a safe distance. On the Salève, 4300 ft. above Geneva, we made but one addition to our list on June 21st—the Tree-Pipit, which we failed to notice elsewhere.

The Lake of Geneva was, as usual, patronized by the Black Kite, and also by flocks of Black-headed Gulls, the shape of whose heads seemed to me to differ a good deal from those of our birds at home; we only saw them on the rocks near Lutry. At Thonon a Common Tern appeared, but otherwise Lake Leman seemed sadly birdless.

On the whole, I observed only fifty-eight different species in Switzerland this year, and again failed to find the Alpine Accentor. The visitors in the hotel took a lively interest in the birds around us, and a lecture on the subject which I delivered was attended by all the English in the neighbourhood.

What a pity that no cheap guide to Swiss birds can be put into the hands of the crowds of visitors to "the playground of Europe" every year. It would find many interested readers and observers.

NOTES AND QUERIES.

MAMMALIA.

On the First Occurrence of the Noctule in Scotland.—So far the Noctule is not known to have occurred in Scotland. The late Mr. E. A. Alston ('Fauna of Scotland,' 1880, p. 7) did not credit Sir William Jardine's statement in the 'New Stat. Acc. Dumf.' (p. 175) that it had been seen on the Annan in Dumfriesshire, and no more northern limit of the species than the Solway is accepted by British writers. After many years spent in working at our northern fauna, I have never heard of a single instance of the existence of any large species of Bat until Oct. 15th of this year, when Mr. Charles Eversfield, of Deune, whose father had rented the Dalguise shootings and fishings on the Tay in Perthshire, sent me in the flesh a large female Noctule (14½ in. across the extended wings), which he had killed two days previously at that place. Mr. Eversfield has a fair knowledge of our Bats, having assisted me to procure specimens on several occasions, and the unusual size of the present example attracted his notice whilst Salmon-fishing; so he procured his gun and shot it as it hawked up and down the river. Unfortunately the specimen was somewhat decomposed by the time it reached me, but I am preserving the skeleton for the Perth Museum.—J. G. Millais (Horsham).

The Yellow-necked Mouse (Mus s. flavicollis) in Richmond, Surrey. I wish to record the above subspecies of *Mus sylvaticus*, which I took in a wood at the back of Richmond Hill on Oct. 15th last. I have often taken the typical form there, which of course is common, but this is the first time I have trapped *flavicollis*. The specimen (a fine female) gave the following measurements in millimetres:—Head and body, 98; tail, 102; hind foot, 23·5; ear, 17·5.—Gordon Dalgliesh (29, Larkfield Road, Richmond, Surrey).

Notes on the Common Shrew (Sorex araneus).—I have lately been going through the collection of Common Shrews in the British Museum. The Museum possesses a fine series of these, thanks to the zeal of numerous collectors throughout the British Isles. There are specimens collected in every month of the year, and this has enabled me to determine one or two interesting points. Shrews moult twice in the year—spring and autumn—though the former moult is not complete, and consists of shedding only some of the fur. The first moult takes place in April, and by June they have put on their summer coat. The second moult takes place in September, and by November they are in full winter coat. In colour Shrews vary exceedingly, and the British Museum possesses specimens from white to nearly black. White patches on the brown fur are not uncommon, and I have seen some with the tip of the tail white. The winter coat is much darker than the summer one, and this I put down to the sun, not being strong at that time of year, and not bleaching them. This year (1904), whilst trapping Field-Mice, Voles, and small mammals generally for my collection, I was often surprised to find a Mouse in the trap which had been half-devoured by some other animal. This puzzled me for some time as to what did the mischief, until I found it out to be the work of a Shrew. That these little animals are carnivorous in their tastes is, I believe, well known, and the late Frank Buckland tells of one, in his book, 'Curiosities of Natural History,' which was found in the act of capturing a Frog. They are very sensitive, and easily killed from shock, as I can vouch. Wishing one year to procure living specimens, I set the old-fashioned wooden Mouse-trap, but always found the Shrews dead in them, and suppose they died from pure fright.—Gordon Dalgliesh (29, Larkfield Road, Richmond, Surrey).

Notes on Albinism and Melanism in Mammalia. — Why is it animals "off colour," so to speak, are nearly always smaller than those of the normal colour? For instance, the black variety of the Water-Vole (*Microtus amphibius*) is, I have always found, much smaller than the ordinary form, though I know this species varies considerably in size; nevertheless, the black form is nearly always small. I have a specimen of this, and, though fully adult, it only measures, head and body, 152 mm., and the ordinary form ranges from 185 to 214 mm. Again, albinos—or, to be more correct, white specimens—are almost invariably females, and very much smaller than ordinary coloured specimens. I drew the attention of readers of 'The Zoologist' to this in a former note with regard to the Stoat and Weasel. Albinism is not uncommon in the Hedgehog (*Erinaceus europæus*), Shrew (*Sorex araneus*), and Mole (*Talpa europæa*), and these, as a rule, are below the average size. Perhaps the reason of this is weakness or disease, but this wants investigating, and I shall be glad if any naturalist can throw any light on the matter. — Gordon Dalgliesh (29, Larkfield Road, Richmond, Surrey).

AVES.

Increase of Goldfinches in Kent. — I have noticed with great pleasure the marked increase of Goldfinches (*Carduelis elegans*) this autumn, and at the present time* in this neighbourhood quite large flocks of from twenty birds or more may be seen mingling with the countless numbers of brown Linnets, Chaffinches, and Greenfinches, which fly in clouds from the hedgerows and stubble as one passes. This increase is, I conclude, due to the "Wild Birds Protection Acts," which, I believe, prohibit the killing or taking of the Goldfinch throughout the year. — D. A. Bannerman (High Croft, Westerham, Kent).

Crossbills as Cage-birds.—In July last several Crossbills were consigned to a bird-dealer at Bury St. Edmunds, and we obtained a red male from him, which died in a few days, partly, I think, from the intense heat. His cage was hung out in the open air in the coolest part of the premises, and I found him dead one sultry afternoon, with his tail, or what was left of it, pointing upwards, as if he had simply fallen over from his perch. He was very tame, and fed well to the last; in fact, he had food in his beak when he died. Soon afterwards I obtained two more (a cock and hen), both showing the remains of the streaked plumage of the nestling, which were placed in the same cage, and soon became very friendly towards each other. They would eat almost anything—ears of wheat or oats, the cones of the larch or Scotch-fir, beech-mast, or ordinary seed; also the buds of the Scotch-fir and the tips of the leaves. Larch-cones seemed to be preferred to all other food, and these they would hold firmly to the perch with one or both feet, wrenching open the scales, and extracting the seeds one by one. In this way they amused themselves for hours, and would allow the closest inspection. Sometimes both took a fancy to the same cone, and a tug-of-war followed, in which the hen was usually victorious. I took them away with me on a short seaside holiday, and they caused much interest, one lady who saw them in a waiting-room inquiring if they were young Parrots. Unfortunately I lost them both on Oct. 2nd through my own carelessness, having hung them out on the front of the house without making the door of their cage secure. We searched all the conifers near the house with binoculars, but could not see or hear anything of them; so doubtless, as soon as they gained their liberty, the irresistible "Call of the Wild" made itself heard, and they moved on towards the south. I much regretted their loss, as the cock-bird especially was a most delightful and intelligent pet, and I was not without hope that with plenty of fresh air and a liberal supply of natural food, which there is no difficulty in obtaining here, he might moult into red plumage, which he already showed signs of doing.—Julian G. Tuck (Tostock Rectory, Bury St. Edmunds, Suffolk).

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* October 15th.

[A full account of Crossbills in captivity was also given by a Suffolk correspondent, J. D. Hoy, in 1834, to 'Loudon's Mag. Nat. Hist.' vol. vii. pp. 54–5. According to Bechstein, great numbers were bred in aviaries in Thuringia.—Ed.]

Lapland Bunting at Warwick.—On the 21st ult. a birdcatcher brought me alive an example of the Lapland Bunting (*Calcarius lapponicus*), which he had taken in a clap-net a few hours previously near Acocks Green, in the county of Warwick, about four miles from the city of Birmingham. It is a male, the russet collar showing fairly distinctly, and the whole plumage and claws bright and clean. The man stated that before taking this two birds had dropped in the net, but, thinking they were "Titlarks," he had let them go, but shortly afterwards two Chaffinches and another alighted, and he pulled. I have four specimens of this bird in my collection, three of them taken at Yarmouth, and one in Sussex, in the winters of 1892–93, and I have carefully compared the Warwickshire bird with them. In doing so I noticed a considerable variation in the amount of white in the second outer tail-feathers, and, roughly measuring this in each specimen, I found as follows:—

Yarmouth Birds.—No. 1. Width at tip of feather, ¼ in.; length, 11/16 in. No. 2. Width at tip of feather, ⅛ in.; length, ⅝ in. No. 3. Width at tip of feather, 1/16 in.; length, ¾ in.

In the Sussex and the Warwickshire birds this feather was entirely black, though in the former I am not sure that there is the full complement of feathers, there being only ten, while all the others have twelve. In the Yarmouth bird, No. 3, the white is a mere streak, and is slightly obscured with black for about a quarter of an inch towards the tip, and the white is hardly white but rather buff, something like the edges of the dorsal feathers, but of a lighter shade. In no case is the white patch nearly so large as that in the corresponding feather of the Reed-Buntings I have. The length of the hind claw seems also subject to variation; in one of the Yarmouth birds it is fully ⅝ in. long, in all the others about ½ in.—Thomas Ground (School Lane, Moseley, Birmingham).

Lapland Buntings in Norfolk.—Mr. Clement T. Carroll writes me word that he has received two living Lapland Buntings, captured on the denes at Great Yarmouth in September. The first, a female, was taken on the 18th, and the other, a young male, on the 24th. Snow-

Buntings were reported as arriving at Yarmouth this autumn much earlier than usual.—O. V. APLIN (Bloxham, Oxon).

Curious Habit of Starlings.—I should like to draw your readers' attention to a curious habit I noted this year, for the first time, amongst the Starlings (*Sturnus vulgaris*); I refer to their mode of hawking after flies in the same manner as Swifts and Swallows. A number get together, flit their tails and wings, spreading them out, now drawing them in, and tumbling about in the air as the above-mentioned species often do. The Starlings have increased enormously with us of late, and have taken to building in the ivy, as the holes and spouts are full up with nests.—W. H. WORKMAN (Lismore, Windsor, Belfast).

Hooded Crow (Corvus cornix).—A specimen of this rare visitor to Cheshire has been shot at Hollington, near Chester, on Oct. 18th, 1904. A. NEWSTEAD (Chester).

Hoopoe (Upupa epops) in Cheshire.—A Hoopoe was shot in a potato-field on the outskirts of Sale on Sept. 21st. It had been seen in this and the adjoining fields since the 17th, and with characteristic tameness had allowed those interested in its appearance to approach within ten yards of it again and again as it fed. The bird is immature, the plumage of the throat and breast being pale, and the beak measuring, in a straight line from the gape to the tip of the upper mandible, 2·1 in., the culmen 1·75 in.—CHAS. OLDHAM (Knutsford).

Boldness of the Buzzard.—I was greatly interested in Mr. Salter's account of the unusual boldness of this generally shy bird. Though, in my experience, I have found the Buzzard nearly as shy and timid as the Golden Eagle at its nesting haunts, a friend of mine had once a very different experience. While ascending a rocky mountain in the "Clyde" area, where perhaps the Buzzard is more justly entitled to be termed "Common" than in most parts of Scotland, he was startled by the behaviour of a large bird. From his description this was evidently a Buzzard. He was, along with his son, climbing up a narrow ridge of rock leading to the summit, when suddenly the Buzzard appeared, and, in his own words, "after circling two or three times about me, struck the rock more than once with its wings within a yard of my head, at the same time uttering sounds of rage. It next flew to my son, striking the rock as before, and after that repeated the attack on each of us. Finally, with larger sweeps, it disappeared, and left us to pursue our way in peace." This was on "Queen's Birthday, 1900," probably May 21st; a period when the Buzzard should be hatching. I was greatly interested in my friend's account, and on visiting the neighbourhood the following autumn took the occasion to search the spot, to see if it was possible the bird had been defending a nest. This appeared very unlikely, as the attack took place practically at the summit of a mountain nearly 3000 ft. high. No trace of a nesting-place could be seen. I know of at least three occupied eyries within two miles of the spot, but all are between 1000 and 2000 ft.; none near summits. The nearest is well over a mile distant. In the spring of 1902 I found and examined a nest containing three eggs in the neighbourhood (April 20th), but in this case the birds behaved in their usual manner, sailing round with their wailing cry, and gradually disappearing. I may say that the eggs were not disturbed by me, and were probably hatched, as the buttress on which they were placed was decidedly difficult of access. The nest was not remarkable except for its small size—merely a lined hollow in the turf—and for its containing a large quantity of thick string. My only theory to account for the attack is that the bird which made it belonged to the eyrie about a mile away, and had been recently robbed when almost hatching. I am glad to say that the Buzzard in this district seems little persecuted, and that diabolical atrocity, the pole- or stamp-trap, appears to be little, if at all, used. Though I have never seen the Buzzard behave in the manner described by Mr. Salter, yet I have known two other species of birds of prey—the Merlin and the White-tailed Eagle—to exhibit great boldness in defence of their nests, and have been told an apparently authentic story of the killing of a would-be robber by a pair of the latter birds. Possibly the incident in the Frithjof Saga is close to actual fact. The gun is no doubt the secret of the modern timidity of naturally fierce and bold wild mammals and birds.—H. RAEBURN (Craigmillar, Edinburgh).

Habits of Willow-Grouse: a Reply. — In 'The Zoologist' for September (*ante*, p. 348), Mr. J. A. Harvie-Brown has made a critical remark anent a passage found in a paper written by me about some "Riporre" specimens, and published in the P. Z. S., 1904, pp. 411–15. I have related there that the young hybrids, when they got scared, "perched in trees, as the Black-game does, *unlike the Willow-Grouse*." Mr. Harvie-Brown seems to find this statement about the difference in habits of the Black-game and Willow-Grouse incorrect, and declares that he has seen "scores of Willow-Grouse perch on trees!" In the *winter*, when the snow is deep and heavy, and the Willow-Grouse cannot find its food on the ground, and therefore to a great extent must feed on the buds (especially "amenta") of birch-trees, it is a common occurrence to see such birds perching on trees. The condition is, however, quite different when the ground is bare—not covered by snow. At that time I have never seen any Willow-Grouse perch on trees, and this is the experience of several sportsmen I have consulted on the point. I am therefore inclined to believe that during that time of the year the Willow-Grouse never perches on trees. Certainly the Willow-Grouse does not, when scared by hunting-dogs, take its refuge in trees, but, as everybody knows, this is almost the rule when young Black-game are scared similarly in a woody district. (The peasantry in Scandinavia do therefore, and especially did in former days, hunt the young Black-game in the autumn with barking Dogs.) In consequence of this I think that I was perfectly right in pointing out the contradistinction in this respect between the parental birds of the "Riporre," and in saying that the habits of the hybrids were similar to those of the Black-game when they perched on trees. It must of course be remembered that in the paper quoted I speak about the habits of the hybrids "during the summer and autumn of 1901," and that I state that the last of them were "shot in the month of October." The criticism of Mr. J. A. Harvie-Brown appears accordingly to be hardly necessary.—EINAR LÖNNBERG (Stockholm).

Spotted Crake (Porzana maruetta) in Co. Antrim.—A Belfast gentleman, whilst Snipe-shooting at Silversprings, near Templepatrick, Co. Antrim, on October 8th last, shot one of these rare visitors along with a Common Snipe, both birds falling to the one barrel. Thinking it was a Water-Rail, the bird was thrown away, but fortunately was recovered again, and brought to Messrs. Sheals, taxidermists, Belfast, who identified it, and by whom it has been admirably set up. On dissection it proved to be a young female. Ussher and Warren, in their 'Birds of Ireland,' record five occasions on which this bird has been obtained in Co. Antrim; so this makes the sixth. A strange coincidence is that on the same date, *viz.* Oct. 8th in 1898, Messrs. Sheals had one of these birds sent to them for preservation, shot at Cullybackey, Co. Antrim.—W. C. WRIGHT (Belfast).

Swimming Powers of the Oystercatcher.—I was much struck with the swimming powers of an Oystercatcher (*Hæmatopus ostralegus*) which I witnessed at the North Bull, Dublin Bay, when in company with Messrs. A. and E. Williams on Oct. 23rd last. The bird, when we first saw it, was wading along the water's edge, and, as we mounted the sand-hills and appeared in full view, it commenced to race along the beach for a short distance, and then took to the water. It was slightly wounded, and unable to fly. Swiftly and strongly it headed out to sea, retreating from us as we ran down to the water's edge to intercept a gunner who was approaching us along the shore, and who, we were afraid, would seal the poor bird's fate before it could swim out of gunshot range. Happily, however, fully eighty yards of water were traversed ere the shooter arrived opposite it, and, by diverting his attention, we managed to get him to pass by the bird without observing it. Next we directed our gaze seawards, and descried the Oystercatcher as a small dark object bobbing up and down on the waves some two hundred yards from the shore. We expected it would reach a sandbank about to be laid bare by the ebbing tide; instead of this, however, it retraced its course, and headed for the beach, swimming strongly against the tide. Seeking ambush amid the rushes of the sand-dunes, we watched the bird swim in. Directly it landed I rushed after it barefooted (lest the bird might take to the water a second time), and, after an exciting chase along the shore, succeeded in capturing it. On examination the bird proved to be a beautiful adult in fine plumage, and only slightly injured in the right wing. Curiously enough, the rich crimson pigment was absent over a small area of the iris, giving to the pupil an irregular and rather jagged outline. This condition was symmetrical in both eyes. In the afternoon I took the bird to the Dublin Zoological Gardens, where, it is to be hoped, it will have a happy time, and end its days in peace. I noticed that the wing had healed considerably, so that the bird had probably been living a week or more in a disabled condition on the beach before I captured it. The wonder is how it escaped, as wounded birds have to run the gauntlet of being attacked by many enemies—Man, Dogs, Hawks, Skuas, and the larger Sea-Gulls. For instance, during the short time that we saw it on the water a flock of screaming Herring-Gulls passed over it; their cries attracted a Great Black-backed Gull, which made a few nasty swoops at the poor Oystercatcher. Indeed, I doubt if the latter would have reached the shore alive had not a few Herring-Gulls mobbed the assailant, driving him off with angry threats. It is interesting to note that it was directly after the Gulls cleared away the Oystercatcher began to swim for the shore. Question: Could the bird have apprehended further danger on the water, or was it simply exhaustion that drove it ashore, or both? I may add that I have repeatedly seen several species of Limicoline birds swim, generally, but not always, to escape danger, and usually for shorter distances than the above instance which I have recorded.—C. J. Patten (University College, Sheffield).

The Red-throated Diver (Colymbus septentrionalis).—All Irish ornithologists, and especially those who take an interest in our rare breeding species, deplore the wanton cruelty and persecution that is meted out every season to these fine birds, and possibly the only pair at present known to breed in Ireland. This year the first clutch of eggs were taken by a native—who was doubtless well rewarded—and sent to Dublin; the exact address can, if necessary, be disclosed later. The birds, thus frustrated in their first attempt, changed the nesting-site, and, although the whole country-side was searched, the second nest, I am glad to say, was never discovered. The parent birds were seen during the month of August flying backwards and forwards from the sea, generally with fish, and by the middle of September they had disappeared from the district.—W. C. WRIGHT (Belfast).

Modern Egg-collecting.—The Rev. J. G. Tuck, in his interesting note (*ante*, p. 351), has voiced a suspicion which must have occurred to many. While the numbers of several of our rarer birds rapidly approach vanishing point, the dealers continue to offer in undiminished numbers recently-taken clutches of their eggs, "with full details." Every right-thinking naturalist must rejoice when the wealthy collector who has been so foolish as to give £15 for his set of Welsh Kites' eggs is imposed upon by the substitution of a foreign clutch. I say this advisedly, knowing something of the ruin which the modern system of egg-collecting is bringing to our rarer native species, such as the Raven, Buzzard, and Kite. Posterity will probably condemn altogether the practice of making private collections of eggs, especially those in which it is sought to illustrate every possible variety of colouration by means of a large series of clutches of the eggs of each species, however rare it may be. Many are induced to collect eggs by the same impulse which prompts others to amass old china or bric-a-brac, but with the difference that the harm which they do is irreparable. Their selfish greed and love of acquisition are seriously impoverishing the British fauna. Unfortunately the high prices obtained for "well-authenticated clutches" at recent sales, encourage the unscrupulous collector to pay a high figure in the belief that the value of his eggs will increase with the growing scarcity of the bird which laid them, and that consequently his collection can at any time be disposed of at a profit if brought under the hammer. As illustrating the persecution to which our rarer birds are exposed, it may be mentioned that in a certain district in mid-Wales there are seven pairs of Ravens. They have not been allowed this year to bring off a single young bird. The Buzzards have fared very little better, while, needless to say, the Kites, now reduced to a miserable remnant of three or four pairs, have once more been plundered. The writer would ask others to join him in strongly appealing to all true naturalists to refrain from acquiring British-taken eggs of any species which is within measurable distance of extinction in these islands.—J. H. SALTER (University College, Aberystwyth).

Shore-Birds at Burnham, Somerset.—While spending a few days at Burnham, at the end of last September, I usually took a stroll on the sands before breakfast, in order to watch the wading birds which frequent the large mud-flats at the estuaries of the Rivers Brue and Parrett. A little to the north of Burnham, and nearly three miles from the sand-hills, lies an extensive bank called the Gore Sand, which is only covered by the highest tides. At high water this bank is an island, and affords a safe resting-place for thousands of birds while their feeding-grounds on the mud-flats are covered by the tide. Soon after 7 a.m., on Sept. 24th, when the water had just begun to ebb, I stationed myself on a high sand-hill, armed with prism binoculars of twelve diameters magnifying power. The rising sun at my back was shining directly over the fast-appearing mud-flats, and lit up brilliantly the ridge of the Gore Sand. Even at that long range my powerful glasses enabled me in the bright light to identify many of the sea-fowl which were crowded together on the bank. A dazzling white line of many thousands of Gulls stretched across the ridge, and by the well-known cries which came to me over the water, I should say that the majority belonged to the black-headed species. Here and there a very large Gull with deep black back, probably *Larus marinus*, would show up conspicuously among the smaller species. A crowded group of many hundreds of Curlews were huddled together near the Gulls, and their shrill wailing cries were constantly to be heard. About one hundred Sheld-Ducks were also resting on the ridge, and these seemed to be anxious to commence feeding, as many were continually rising and flying round with that buoyant flight of theirs, less laboured than that of most of the Duck species. A bunch of smaller black and white birds were probably Oystercatchers, but the range was too far for my glass; there could be no mistake, however, in identifying those nine tall grey statues as watchful Herons. Ever and anon flocks of little Waders would dash past the resting birds, and suddenly, as all turned together, their under parts would flash white in the sunlight, giving the appearance of a drifting storm of snowflakes.

While I am watching this interesting assemblage on the sand-bank, the ebbing tide is fast laying bare the mud-flats close in front of my position, and birds keep arriving from all sides, and settling within easy range of my glasses. The small Waders are mostly Dunlin and Ringed Plovers, some of the former still retaining traces of their dark breast-feathers; but among these it is easy to make out a good many Turnstones, and several times I catch their chattering cry. A Whimbrel is busy looking for a meal; in these parts a local name for this species is "Cowslip Bird," because its spring arrival coincides with the opening of that flower; but the bird before me would be a visitor on its way south from northern breeding haunts.

Presently I turn my glasses on a bird circling round with rather unsteady flight, and evidently about to alight on the mud. The tail is dark, and the upper tail-coverts conspicuously white, and as the bird pitches on the mud close to a Curlew and a small party of Grey Plovers, I get an interesting study in "bills." He is a Godwit, perhaps belonging to the rarer black-tailed species, and his slightly upturned beak contrasts with the long downward-curving bill of the Curlew and the short straight ones of the Plovers. Each no doubt is adapted for securing a particular kind of food. On the sands are parties of Pied Wagtails, and among the dunes around me are twittering flocks of Greenfinches and Linnets, busy with the seeds of various plants. The air is full of Swallows and House-Martins, mostly young birds, preparing for their southward flight. These are hawking very low, and constantly alighting on the sand. Their prey is probably a species of grey fly, which may be seen in numbers on the sandy shore.

Every minute more and more stretches of oozy mud-flats are laid bare, and hidden sand-banks begin to make their appearance above the receding tide. The crowd of birds on the Gore Sand gets more and more restless; Gulls, Curlews, Ducks, and Waders drift away in straggling parties to spread over the rich feeding-grounds, until the return of the tide shall impel them once more to assemble on the sand-bank, which is for them a safe haven of refuge.—F. L. Blathwayt (Lincoln).

AMPHIBIA.

Newts in North Wales.—In reply to Mr. Forrest's question (*ante*, p. 391), I may say that the Common Newt (*Molge vulgaris*) occurs in Denbighshire, where I have found it near Trefnant, associated with *M. cristata*; but, although I have sought for it in many places, I have never found it in Carnarvon or Anglesea. In these counties *M. palmata* is the dominant species. In Carnarvon I have taken it near Abersoch (Zool. 1888, p. 394), and, associated with *M. cristata*, in a pond in a limestone quarry on the Little Orme. In Anglesea it occurs near

Ty-croes and Valley (Zool. 1892, p. 272), at Llangoed, Aberffraw, Bodorgan, Cemmaes, on the cliffs near Penmon Priory, in small pools high up on Holyhead Mountain, and, associated with *M. cristata*, at Moelfre. The Palmated Newt—occasionally, at any rate—passes the winter in the larval state. On April 5th, 1896, I found undeveloped examples about 28 mm. in length near Nantglyn, Denbighshire (Zool. 1896, p. 147), and on April 7th, 1901, I took many from a pond in a quarry at Shebbear, North Devon, which measured 24–29 mm. In Anglesea, in 1902, I found larval Newts of this species with the branchiæ still persisting so late as the first week in June.—CHARLES OLDHAM (Knutsford).

NOTICES OF NEW BOOKS.

The American Natural History; a Foundation of Useful Knowledge of the Higher Animals of North America. By WM. T. HORNADAY. George Newnes, Lim.

THE higher animals dealt with in this volume are Mammals, Birds, Reptiles, Amphibians, and Fishes of the Nearctic fauna. The volume contains the best illustrations we have seen for a very long time, and we are told in the preface: "Because of the limitations of the camera, several thousand dollars have been expended upon the beautiful drawings by Messrs. J. Carter Beard, Carl Rungius, Edmund J. Sawyer, and a few other artists, which adorn as well as illustrate this work." There are also a number of original photographic illustrations, and the work is commendably free from the old friends one usually finds served up in the illustrations to new books on natural history.

As regards the subject-matter, Mr. Hornaday possesses some very strong convictions. He is no admirer of our modern method of "nature studies," and we read that "the author maintains in this volume, and also out of it, that *System* is the only master-key by which the doors of Animate Nature can be unlocked"; and we are glad to learn that, through the advice of Dr. T. S. Palmer and others, "the author's old-fashioned preferences on certain points of nomenclature were abandoned, and the names of orders, families, genera, and species were brought down to date." Still, some ambiguity exists owing to a somewhat archaic terminology. Thus we read that, "except man, the mammals which live upon land are also called quadrupeds," though further on, that, "although the Bat is a true mammal, it is almost as wide a departure from the ordinary four-legged, land-going type as is a Whale or Manatee." Query: Are we to understand that a Bat is a quadruped? A further doubt crosses our mind as we examine the excellent illustration of "Skeletons of Man and Gorilla." Mr. Hornaday states that "the widest differences between Man and the Gorilla are in their skulls," and certainly this is accentuated in the figure of the human skeleton, whose skull might reasonably be supposed to have contained the brains of a philosopher, or a "Caucasian philosopher," as our author writes in another place. This is scarcely a comparison an evolutionist would make; the skull of the Gorilla should be compared, say, with a prognathous negro skull, or, better still, a copy might have been made of the frontispiece to Huxley's 'Man's Place in Nature.' Thus "system," which the author inculcates as the "master-key," is perhaps the weakest part of this book, and the discarded "nature study" the strongest, for Mr. Hornaday has contributed a mass of bionomical information that alone would canonize his volume, and, with the beautiful illustrations, render it one that should not only be on the bookshelf, but also frequently taken down for reference.

Creatures of the Sea; being the Life Stories of some Sea Birds, Beasts, and Fishes. By FRANK T. BULLEN, F.R.G.S. Religious Tract Society.

READERS who have in fancy sailed with Mr. Bullen in the 'Cruise of the Cachalot' will welcome another voyage with him round the world in search of the animal life best known to seamen. At one time these creatures were familiar to all who crossed the seas, to both mariner and passenger; but that was in the days of the sailing-vessel, which, to pick up the "trades," and to avoid currents, covered more ocean surface than the straight course made by the steam "liners" of to-day, which, by their regularity of route, must be creating a veritable "cinder-track" on the ocean floor. We now no longer expect to see the "Booby" perching on the yards or booms, to see the Shark and Pilot-fish cruising round the ship as it lay becalmed, or to fish for Bonito, Albacore, or the lovely *Coryphæna;* the passenger now is most interested in the "ship's run," and the prospect of an early arrival.

Mr. Bullen is at his best in recording his own observations, and quite away from the consultation of authorities; many bionomical facts at first hand are to be found, and when he indulges his fancy, as in the "Autobiography of a Sperm Whale," he treats his subject with no small amount of literary skill. He is rightly sceptical on the subject of the so-called "Sea-Serpent," but, in proposing explanations of what may have been seen, he has not consulted Prof. Collett's memoir on '*Chlamydoselachus anguineus.*' Mr. Bullen states that the Great Albatross is never seen alive north of the Equator, and is inclined to say that the Mollymauk "is not found any further north than its great relative"; but *Diomedea melanophrys* has undoubtedly visited the Orkneys, and an exhausted individual, as recorded in these pages, was captured in Cambridgeshire in 1897. However, we do not wish to be critical on a book that absolutely reeks of the ocean, and recalls the days and sights appertaining to early passages made in sailing-vessels; the illustrations are revelations of the sea, in some of which we see the great swell, the swirl and heave, the spray, and other features, in happy contrast to the wooden waves or flat surface of glass so frequently depicted.

Mr. Bullen is a teleologist. In describing the habits of the *Mysticetus*, or Right Whale, he writes:—"The Almighty has ordained that these vast denizens of the frozen Northern Seas shall be at no pains to secure an abundant supply of food." But he almost immediately records how "the fierce *Orca gladiator*, or Killer Whale, attacks and overcomes them"; the Sword-fish (*Xiphias*) "attacks the *Mysticetus* with almost maniacal fury"; he is absolutely certain that he has seen the "Thresher" Shark (*Alopecias vulpes*) "attacking the Whale at close quarters," and that this unfortunate mammal "is begirt with enemies." Is it not better to bear in mind "that the whole creation groaneth and travaileth," and there leave the matter?

This is a book to take to sea with us, to advocate for ship-libraries, and to read at home when we would wish—

> "The waters with their world were all before."

EDITORIAL GLEANINGS.

We have received from Dr. R. Gestro, of Genoa, an excellent and sympathetic biographical notice of the late Leonardo Fea, who died in April of last year. Fea was born in 1852. Originally destined for the profession "del padre," he early imbibed a love of natural history, especially entomology, and made several well-known zoological expeditions. Of these he will always be remembered by his travels in Burma. The "Viaggio di L. Fea in Birmania e regioni vicine" has now been recognized by zoologists as a classical expedition which resulted in immense contributions to our knowledge of the fauna of that region, and Dr. Gestro contributes the titles of one hundred and fifteen papers which have been published by specialists on the material then collected, which comprised examples of all the dominant orders of animal life. In the tropics he never spared himself, and we have heard from Indian residents how lightly he regarded fatigue and danger. He belongs to the roll of zoological pioneers commencing with Bates and Wallace, and at present terminating with Doherty and Fea.

From the Bedale country comes an interesting story of a litter of Black Foxes—a most unusual occurrence. They are upon the estate which at one time belonged to the Duke of Cleveland, a mighty hunter. This remarkable freak of nature reminds one (says the 'Daily Dispatch') of the old superstition that to run a black Fox is almost certain death to those who follow in the chase.—*Norfolk Weekly Standard, Oct. 22nd*, 1904.

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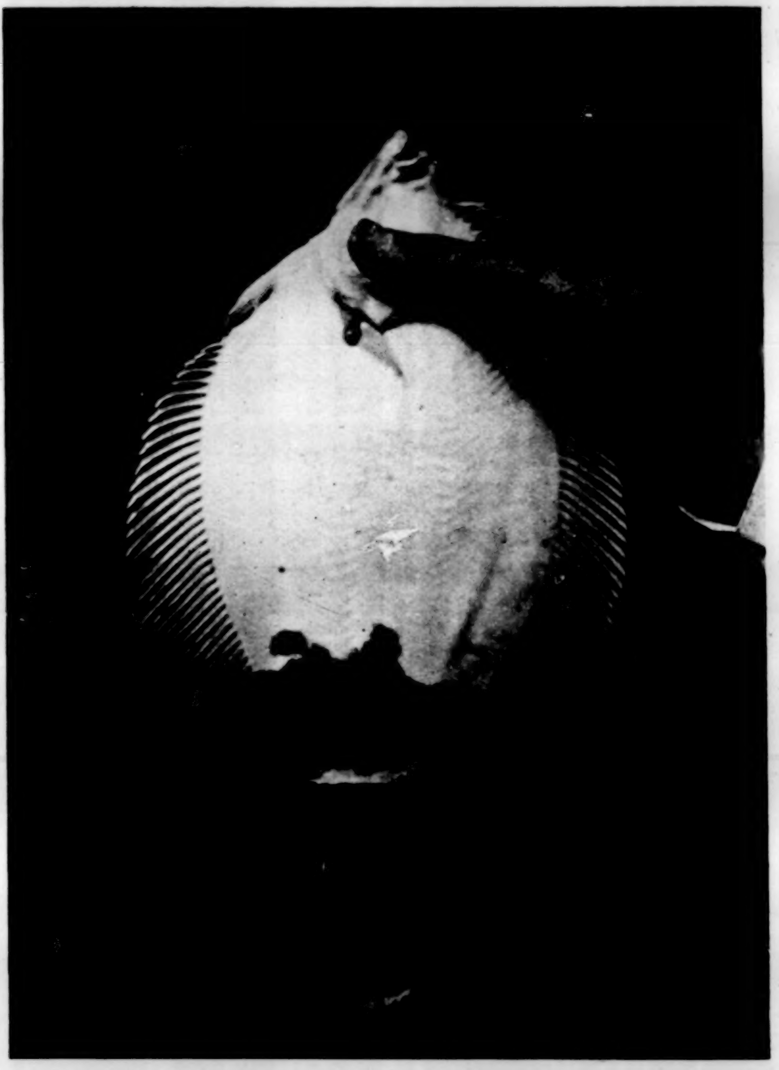

Curious Variety of Plaice (*Pleuronectes platessa*).

Cf. p. 443.